Quentin **Moreno-Gelos**

Profile

Theoretical physicist with over 8 years of extensive research experience in theoretical and computational plasma physics. My expertise lies in developing innovative theoretical models and performing complex simulations to understand plasma behavior in both laboratory and astrophysical environments.

Contact details

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Portfolio
427 route de Broche
Saint Laurent des Hommes

Personal information

Citizenship: **French**
Family: **Single without children**
Languages: **French (native)**, **English (fluent)**, , **Spanish (Intermediate)**

Software Skills

- Python
- SQL
- PowerBI
- fortran95
- Mathematica
- LaTeX
- MS Word, Excel, PowerPoint

Scientific expertise

- Plasma Instabilities
- Shock formation
- Laser plasma interaction
- Kinetic Particle-in-cell code (SMILEI/EPOCH)
- Magneto-hydrodynamic AMR code (FLASH)
- Machine learning

Experience

Postdoctoral fellow at *ELI-beamlines* **2019.01–2023.12**

◇ Theoretical studies on radiative/adiabatic shocks in a context relevant to laboratory astrophysics.

- Designed analytical self-similar models.
- Realized Magneto-Hydrodynamic AMR simulations on large supercalculators.
- Created AMR simulations data visualization tools (matplotlib).
- Analyzed large datasets to confront analytical models with numerical simulations.
- Collaborated with cross-functional teams to design complex laboratory experiment to assess effectiveness of analytical models.
- Published findings in peer-reviewed journals and presented at international conferences.

◇ Conducted numerical analysis to support various research projects.

◇ Supervised a first year master student during 3 months.

PhD Student at *Bordeaux University.* **2015.10–2018.12**

◇ Theoretical studies on plasma instabilities that can lead to collisionless shocks in a context relevant to laboratory astrophysics.

- Designed analytical models.
- Realized Particle-In-Cell (PIC) simulations on large supercalculators.
- Created PIC simulations data visualization tools (matplotlib).
- Analyzed large datasets to confront analytical models with numerical simulations.
- Collaborated with cross-functional teams to design complex laboratory experiment to assess effectiveness of analytical models.
- Published findings in peer-reviewed journals and presented at international conferences.

◇ Course examiner at *Bordeaux University*

- Teaching experience from Bachelor to master degree.

Publications

◇ 13 publications in peer-reviewed journals
◇ h-index: 7 (from researchgate)

Education at Bordeaux University

Doctoral Degree: Astrophysics,plasma and nuclear **2015–2018**
◇ Thesis title: *Non-relativistic collisionless shocks in Laboratory Astrophysics.*

Master's Degree: Theoretical physics **2013–2015**
◇ Astrophysics, Statistical physics, numerical methods

Bachelor's Degree: Theoretical physics **2010–2013**